

In the Claims:

1 1. (original) A method for pressing an object with a main  
2 piston placed in a main cylinder by means of applying a  
3 prescribed pressure to said main piston with working fluid  
4 wherein

5 said working fluid is compressed to said prescribed  
6 pressure by supplying said working fluid to said main  
7 cylinder with driving power of a piezoelectric element.

1 2. (original) The pressing method according to claim 1 wherein  
2 a prescribed voltage is applied to said piezoelectric  
3 element repeatedly until the pressure of said working fluid  
4 reaches to said prescribed pressure.

1 3. (original) A method for pressing an object with a main  
2 piston by means of working fluid to which a prescribed  
3 pressure is applied through a piping system, the piping  
4 system including a main cylinder, a supply line and a  
5 discharge line of said working fluid with respect to said  
6 main cylinder, a check valve preventing reverse flow of  
7 said working fluid from said main cylinder to said supply  
8 line, and a sub-cylinder provided within said supply line,  
9 the pressing method comprising:

10 a first step of displacing a sub-piston provided  
11 within said sub-cylinder from an initial position to press  
12 said working fluid such that said working fluid is  
13 introduced via said check valve to said main cylinder to

14       displace said main piston provided within said main  
15       cylinder; and

16             a second step of causing said sub-piston to return to  
17       said initial position such that said working fluid is  
18       supplied to said sub-cylinder,

19             said first step and said second step being repeated  
20       successively until pressure of said working fluid in said  
21       main cylinder reaches a prescribed pressure level.

1       4.   (original) The pressing method according to claim 3 wherein

2             said first step is performed in a state where a  
3       discharge control valve disposed in said discharge line and  
4       a supply control valve disposed in said supply line are  
5       closed, and

6             said second step is performed in a state where said  
7       discharge control valve and said check valve are closed and  
8       said supply control valve is open.

1       5.   (original) The pressing method according to claim 4 wherein

2             said supply control valve, said discharge control  
3       valve and said sub-piston each have a piezoelectric element  
4       attached thereto, and

5             said piezoelectric elements serve to open and close  
6       said supply control valve and said discharge control valve,  
7       and to displace said sub-piston from the initial position,  
8       respectively.

1     6.     (original) The pressing method according to claim 3 wherein  
2             a detector provided in said main cylinder detects the  
3             pressure of said working fluid, and  
4             when said detector detects said prescribed pressure  
5             level, the displacement of said sub-piston is terminated.

1     7.     (original) A pressing mechanism for pressing an object by  
2             means of pressure of working fluid that is supplied from a  
3             working fluid source to a piping system with a prescribed  
4             pressure, comprising:  
5             a main piston pressing said object;  
6             a main cylinder having said main piston placed  
7             therein, and supplied with said working fluid for  
8             displacement of said main piston;  
9             a check valve preventing reverse flow of said working  
10            fluid supplied to said main cylinder;  
11            a sub-cylinder linked to said main cylinder and having  
12            said working fluid reserved therein for supply to said main  
13            cylinder;  
14            a sub-piston placed within said sub-cylinder;  
15            a supply line for supplying said working fluid from  
16            said working fluid source to said sub-cylinder;  
17            a supply control valve disposed in said supply line;  
18            a discharge line for discharging said working fluid  
19            from said main cylinder to said working fluid source;  
20            a discharge control valve disposed in said discharge  
21            line;  
22            a first driving mechanism driving said sub-piston;

23 a second driving mechanism driving said supply control  
24 valve; and

25 a third driving mechanism driving said discharge  
26 control valve.

1 8. (original) The pressing mechanism according to claim 7  
2 wherein said first, second and third driving mechanisms  
3 each have a piezoelectric element, and said piezoelectric  
4 elements drive said sub-piston, said supply control valve  
5 and said discharge control valve, respectively.

1 9. (original) The pressing mechanism according to claim 7  
2 wherein, of said first, second and third driving  
3 mechanisms, at least said first driving mechanism includes  
4 a displacement enlarging portion that enlarges displacement  
5 of said sub-piston for transmission to said main piston.

1 10. (original) The pressing mechanism according to claim 7  
2 wherein said piping system through which said working fluid  
3 flows is built in said pressing mechanism.

1 11. (original) A resin molding device using the pressing  
2 mechanism according to claim 7, comprising:

3 a reservoir in which molten resin is reserved;

4 a plunger that is pressed by said main piston to press  
5 said molten resin; and

6 a cavity into which said pressed molten resin is  
7 introduced,

8 the molten resin introduced into said cavity being  
9 hardened for resin molding.

1 12. (new) An apparatus for pressing an object, comprising:  
2 a main cylinder;  
3 a main piston arranged in said main cylinder;  
4 a working fluid;  
5 means for applying said working fluid at a prescribed  
6 pressure to said main piston for pressing the object; and  
7 means for pressurizing said working fluid to said  
8 prescribed pressure including a piezoelectric element with  
9 a driving power for pressurizing and supplying said working  
10 fluid.

[RESPONSE CONTINUES ON NEXT PAGE]

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